

A power supply for an electrostatic air filtration unit includes an input stage, an isolation stage and an output stage. The isolation stage electrically isolates the output stage from the input stage. The output stage includes an output amplifier driven through the isolation stage by the oscillator. The output stage further includes a voltage regulator to inhibit the output voltage from exceeding a predetermined maximum voltage. The output of the power supply is insensitive to over-voltage swings in the input power to inhibit spark-over induced damage to the power supply. The power supply is encased in a resin to extend the operational life of the power supply by inhibiting tampering and intrusion of water, and enhancing resistance to corrosion and microbial damage.